Fig.1

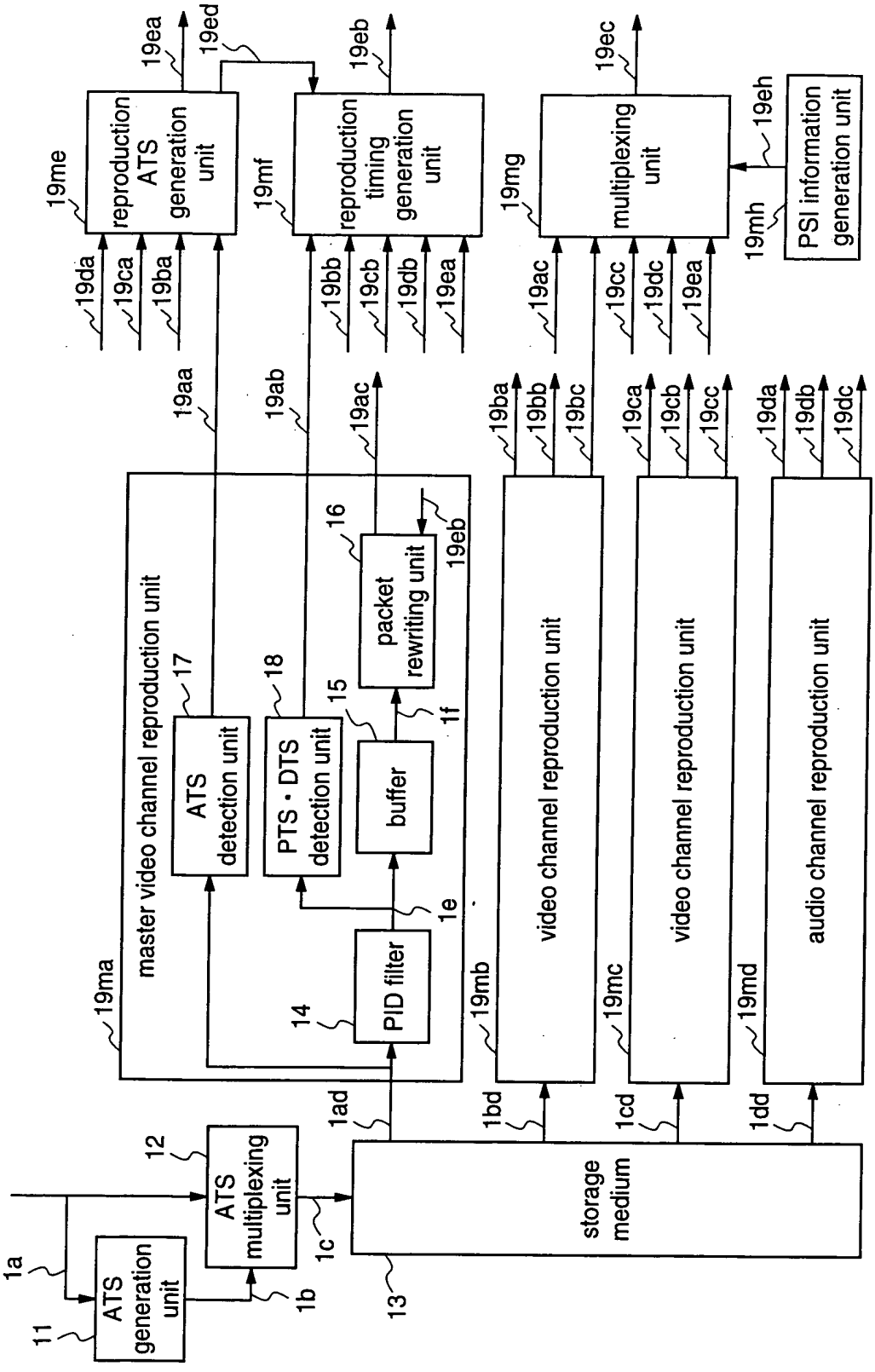

ATS generation unit
ATS multiplexing unit
storage medium
master video channel reproduction unit
ATS detection unit
PTS・DTS detection unit
buffer
packet rewriting unit
PID filter
video channel reproduction unit
video channel reproduction unit
audio channel reproduction unit
reproduction ATS generation unit
reproduction timing generation unit
multiplexing unit
PSI information generation unit
1a
1b
1c
11
12
13
14
15
16
17
18
1e
1f
1ad
1bd
1cd
1dd
19ma
19mb
19mc
19md
19me
19mf
19mg
19mh
19aa
19ab
19ac
19ba
19bb
19bc
19ca
19cb
19cc
19da
19db
19dc
19ea
19eb
19ec
19eh
19ed
19eb
19da
19ca
19ba
19bb
19cb
19db
19ea
19ac
19cc
19dc
19ea

Fig.2

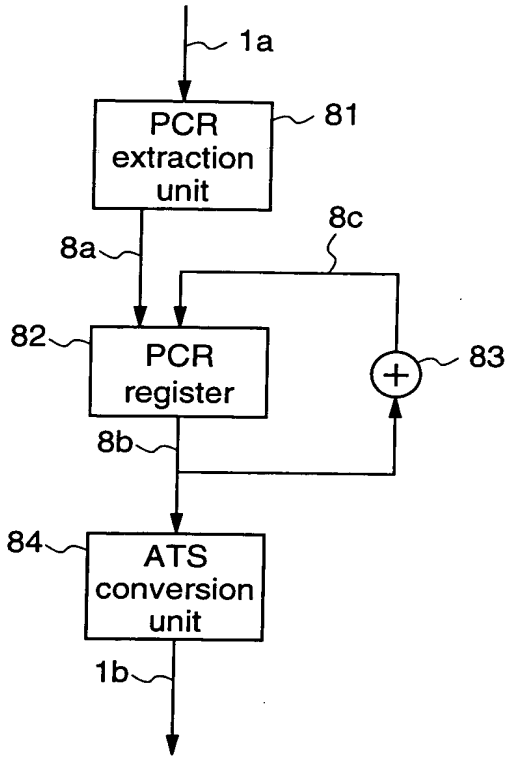

1a
PCR extraction unit
81
8c
8a
82
PCR register
83
8b
84
ATS conversion unit
1b

Fig.3

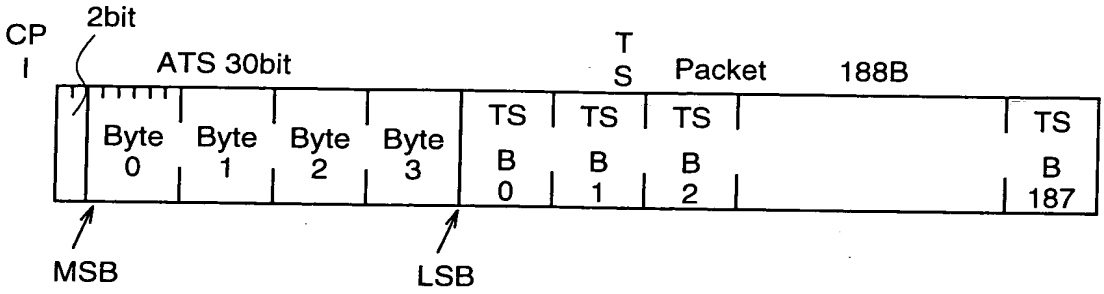

CP
I
2bit
ATS 30bit
T
S
Packet
188B
Byte
0
Byte
1
Byte
2
Byte
3
TS
B
0
TS
B
1
TS
B
2
TS
B
187
MSB
LSB

Fig.4

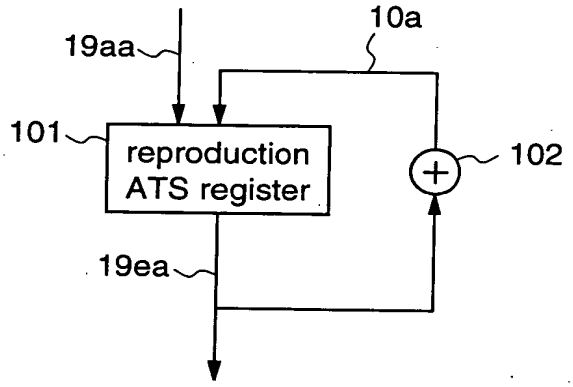

19aa
10a
101
reproduction
ATS register
102
19ea

Fig.5

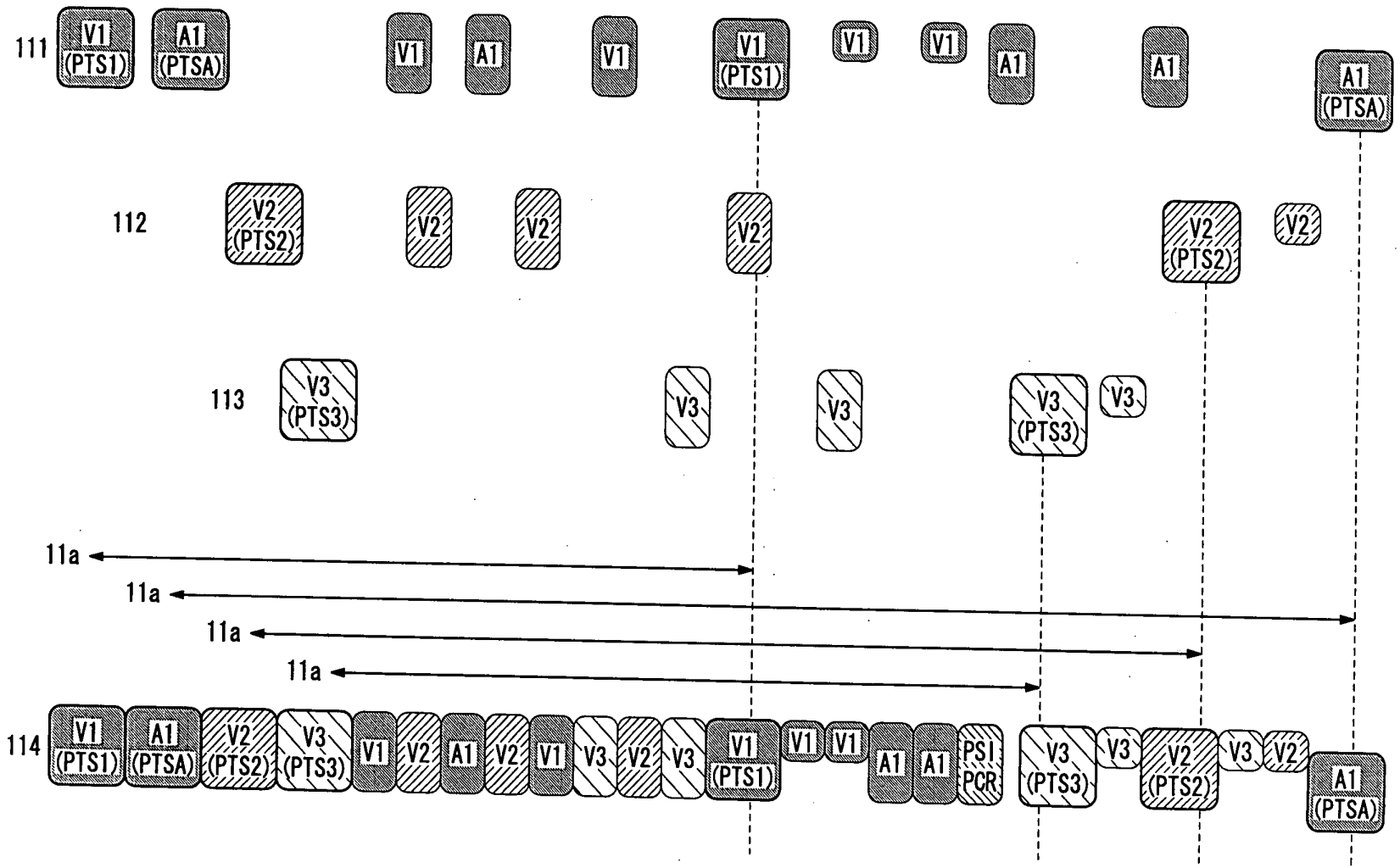

111
V1 (PTS1)
A1 (PTSA)
V1
A1
V1
V1 (PTS1)
V1
V1
A1
A1
A1 (PTSA)
112
V2 (PTS2)
V2
V2
V2
V2 (PTS2)
V2
113
V3 (PTS3)
V3
V3
V3 (PTS3)
V3
11a
11a
11a
11a
114
V1 (PTS1)
A1 (PTSA)
V2 (PTS2)
V3 (PTS3)
V1
V2
A1
V2
V1
V3
V2
V3
V1 (PTS1)
V1
V1
A1
A1
PSI PCR
V3 (PTS3)
V3
V2 (PTS2)
V3
V2
A1 (PTSA)

Fig.6

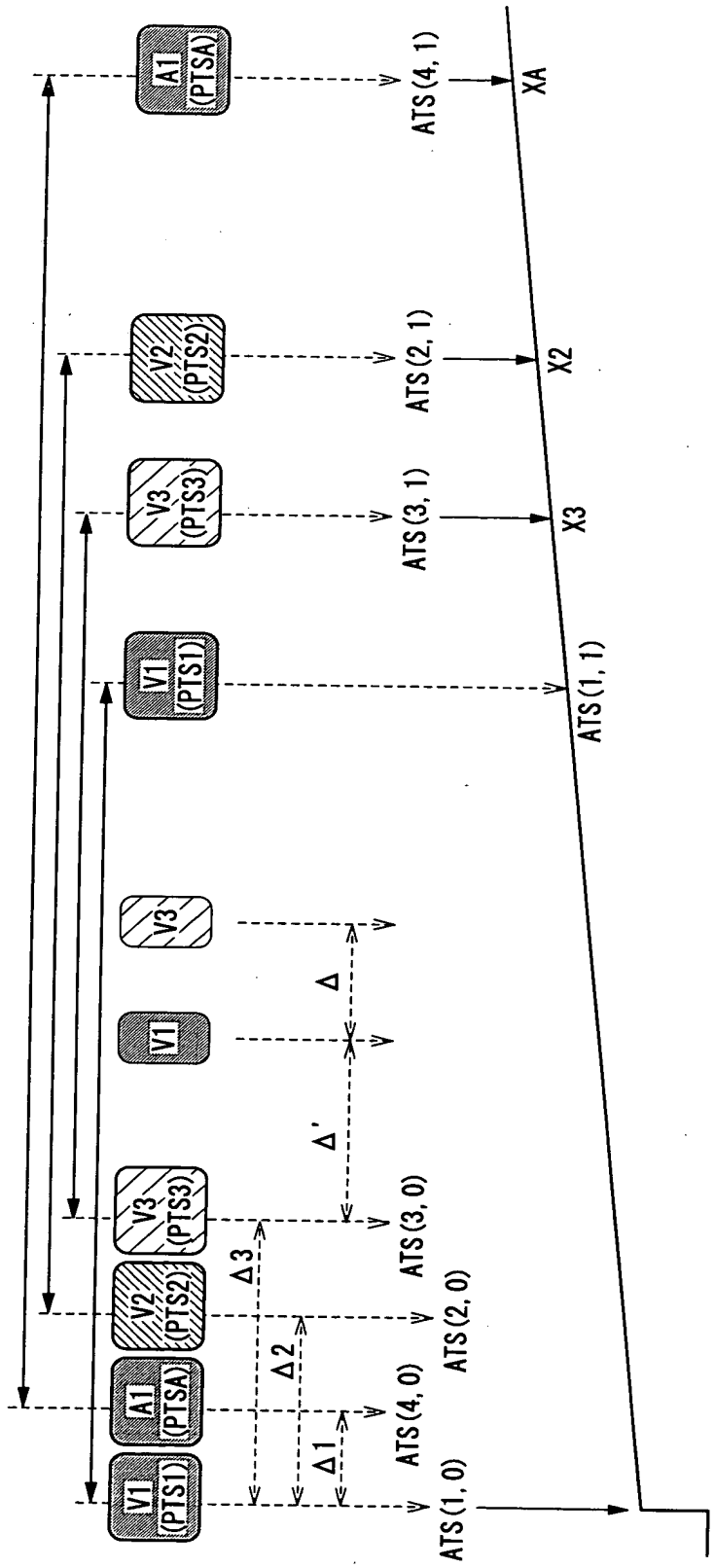

A1 (PTSA)
V2 (PTS2)
V3 (PTS3)
V1 (PTS1)
V3
V1
V3 (PTS3)
V2 (PTS2)
A1 (PTSA)
V1 (PTS1)
ATS(4, 1)
ATS(2, 1)
ATS(3, 1)
ATS(1, 1)
ATS(3, 0)
ATS(2, 0)
ATS(4, 0)
ATS(1, 0)
XA
X2
X3
Δ
Δ'
Δ3
Δ2
Δ1

Fig.7

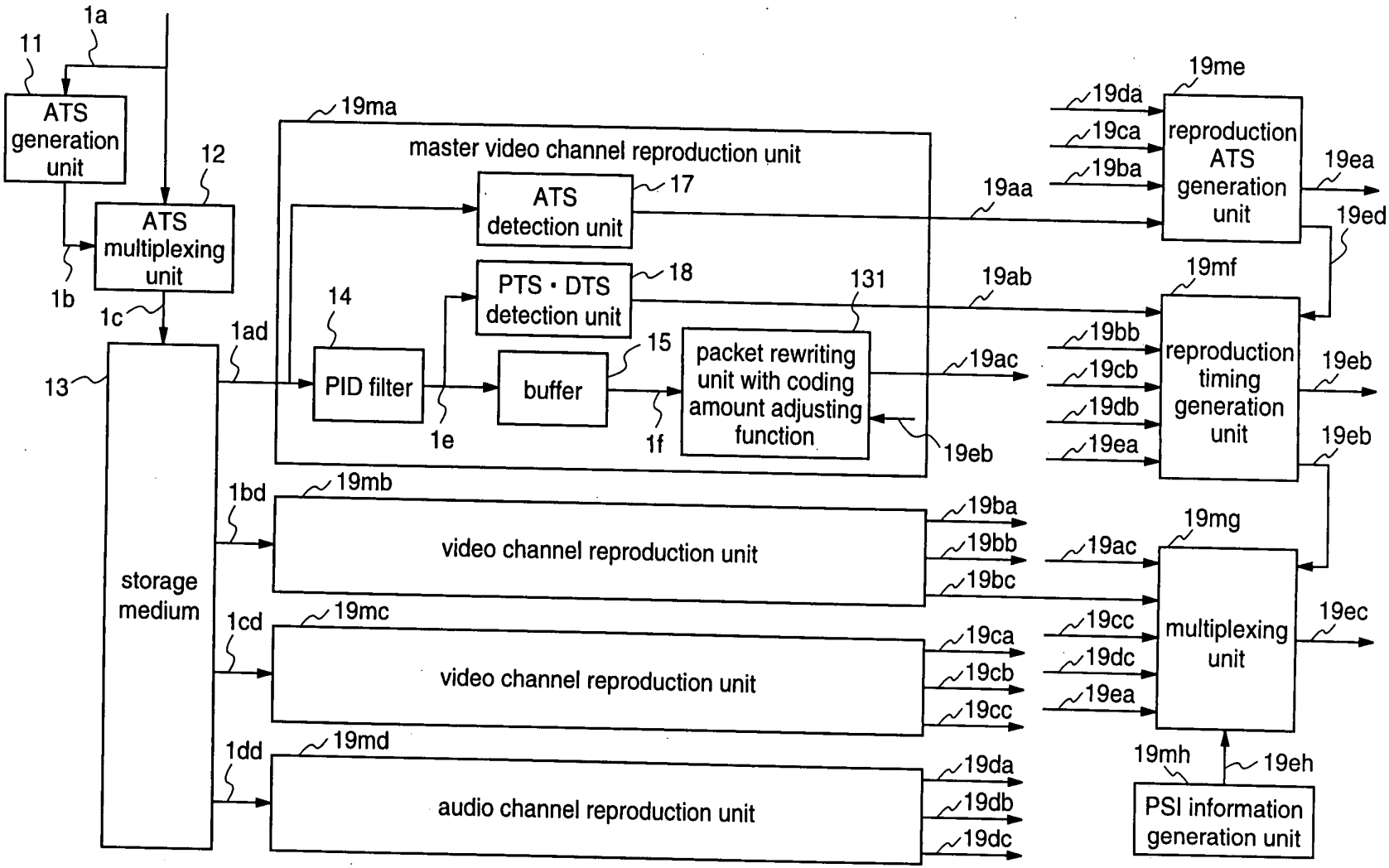

1a
11
ATS generation unit
12
ATS multiplexing unit
1b
1c
13
storage medium
1ad
19ma
master video channel reproduction unit
ATS detection unit
17
PTS・DTS detection unit
18
14
PID filter
1e
buffer
15
1f
packet rewriting unit with coding amount adjusting function
131
19eb
1bd
19mb
video channel reproduction unit
19ba
19bb
19bc
1cd
19mc
video channel reproduction unit
19ca
19cb
19cc
1dd
19md
audio channel reproduction unit
19da
19db
19dc
19aa
19ab
19ac
19me
reproduction ATS generation unit
19da
19ca
19ba
19ea
19ed
19mf
reproduction timing generation unit
19bb
19cb
19db
19ea
19eb
19eb
19mg
multiplexing unit
19ac
19cc
19dc
19ea
19ec
19mh
PSI information generation unit
19eh

Fig.8

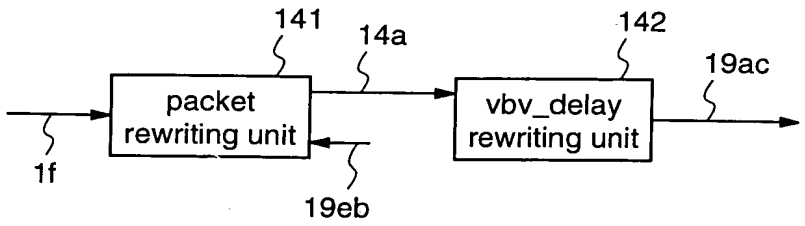


Fig.9

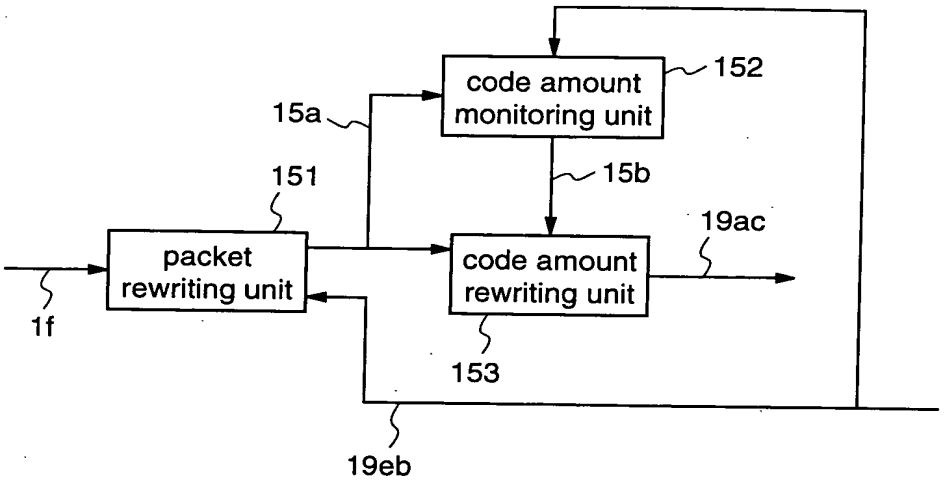


Fig.10

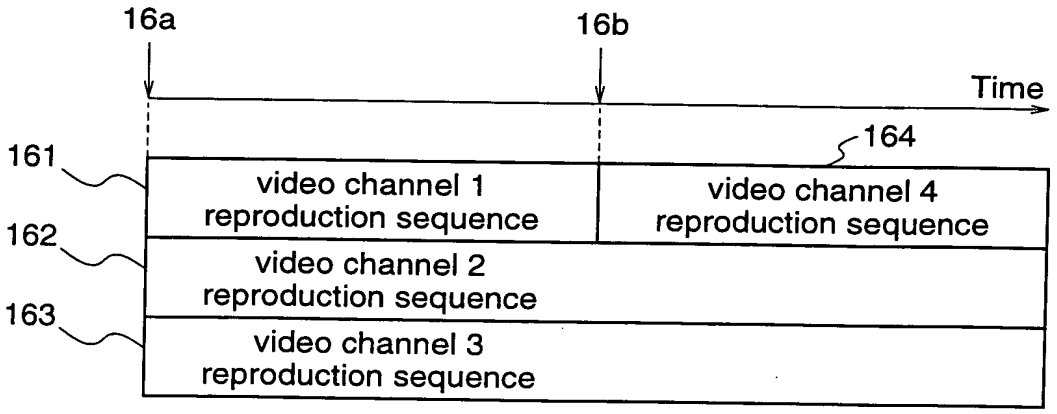


Fig.11

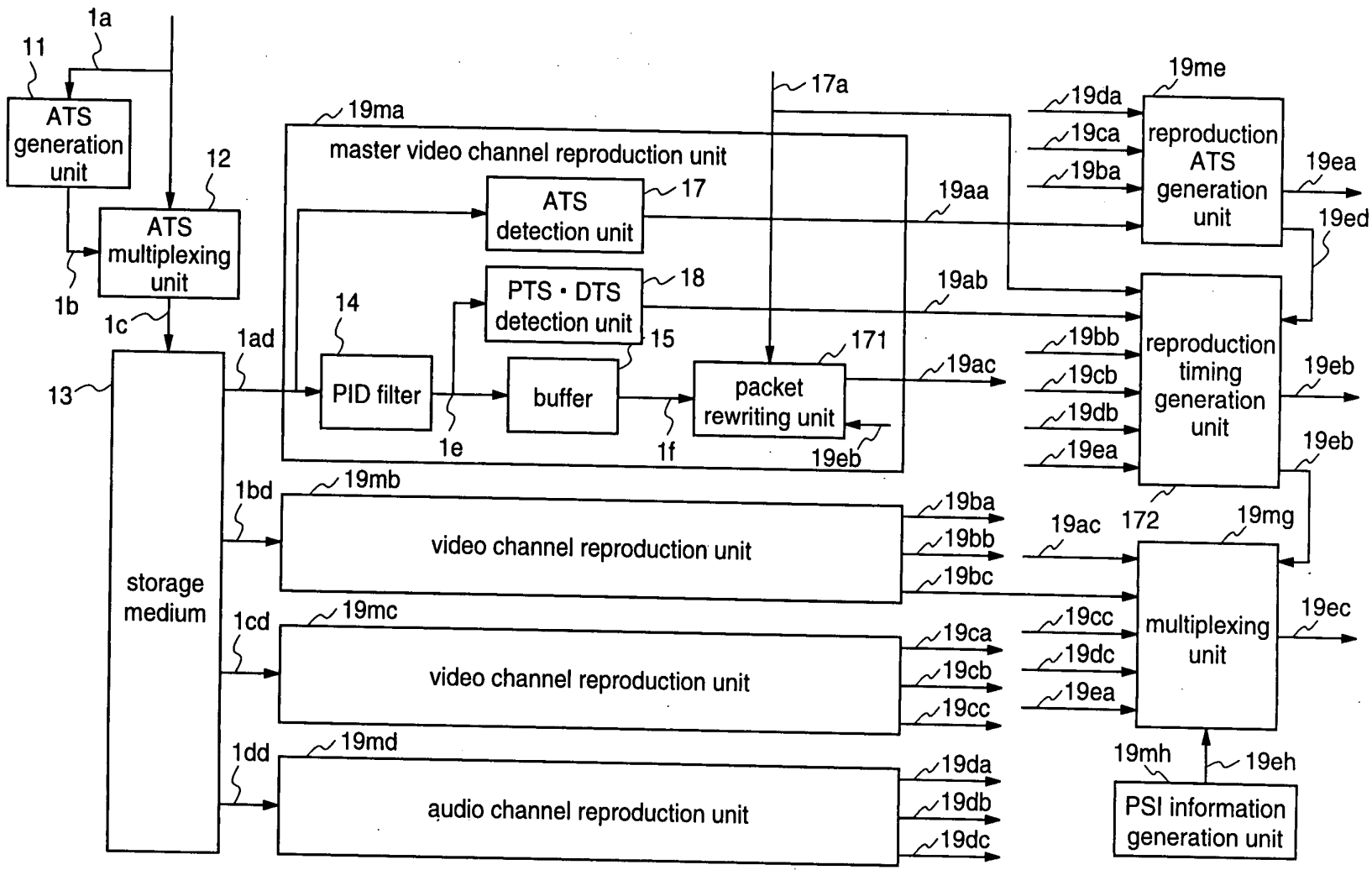

1a
11
ATS generation unit
12
ATS multiplexing unit
1b
1c
13
storage medium
1ad
19ma
master video channel reproduction unit
ATS detection unit
17
17a
19aa
PTS・DTS detection unit
18
19ab
14
PID filter
15
buffer
171
packet rewriting unit
19ac
1e
1f
19eb
19me
19da
19ca
19ba
reproduction ATS generation unit
19ea
19ed
19bb
19cb
19db
19ea
reproduction timing generation unit
19eb
19eb
172
1bd
19mb
video channel reproduction unit
19ba
19bb
19bc
19ac
19mg
1cd
19mc
video channel reproduction unit
19ca
19cb
19cc
19cc
19dc
19ea
multiplexing unit
19ec
1dd
19md
audio channel reproduction unit
19da
19db
19dc
19mh
19eh
PSI information generation unit

Fig.12

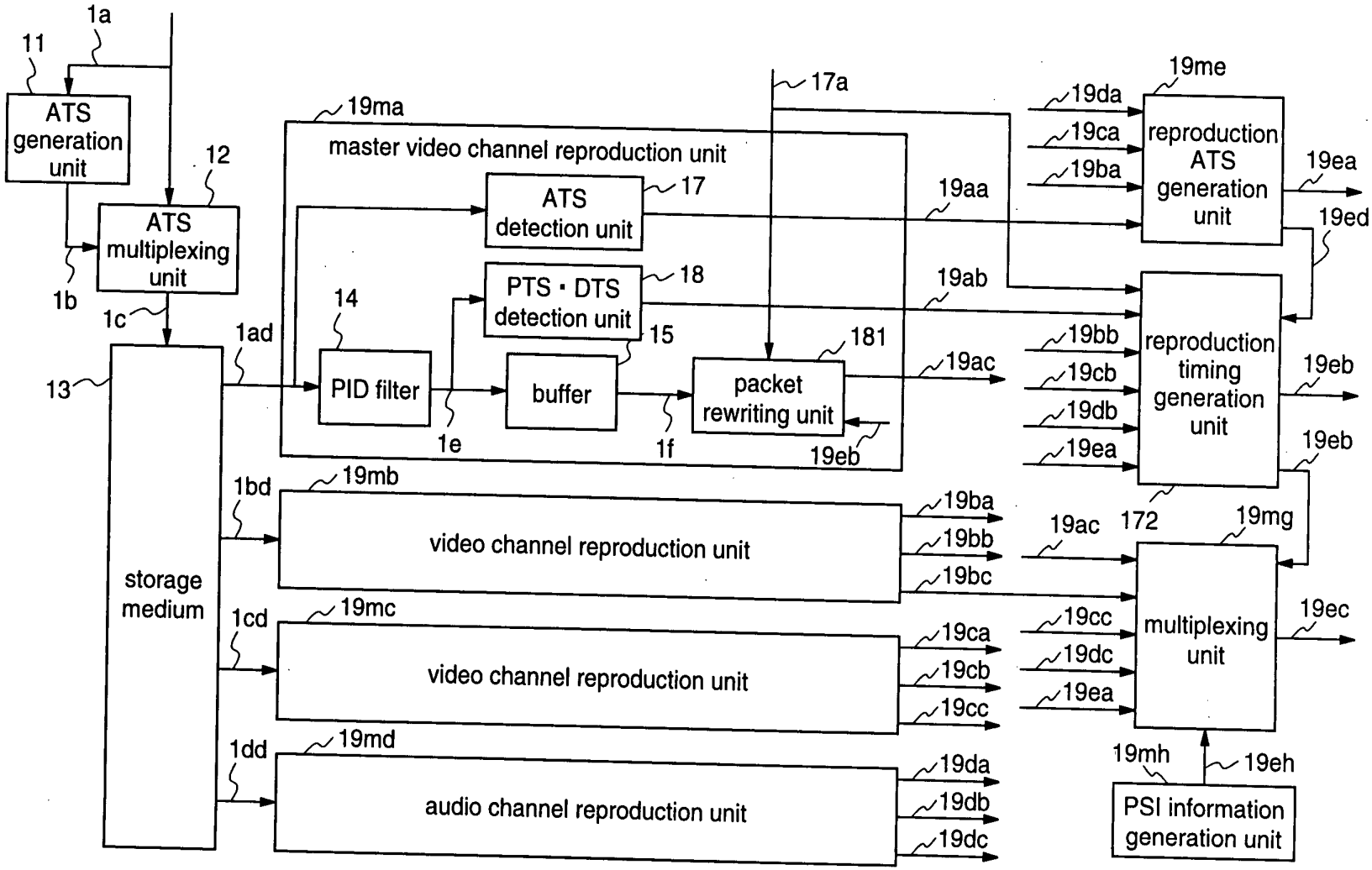

1a
11
ATS generation unit
12
ATS multiplexing unit
1b
1c
13
storage medium
1ad
19ma
master video channel reproduction unit
ATS detection unit
17
17a
PTS・DTS detection unit
18
14
15
181
PID filter
buffer
packet rewriting unit
1e
1f
19eb
19aa
19ab
19ac
19me
reproduction ATS generation unit
19da
19ca
19ba
19ea
19ed
reproduction timing generation unit
19bb
19cb
19db
19ea
19eb
19eb
172
19ac
19mg
multiplexing unit
19ec
1bd
19mb
video channel reproduction unit
19ba
19bb
19bc
1cd
19mc
video channel reproduction unit
19ca
19cb
19cc
19cc
19dc
19ea
1dd
19md
audio channel reproduction unit
19da
19db
19dc
19mh
19eh
PSI information generation unit

Fig.13

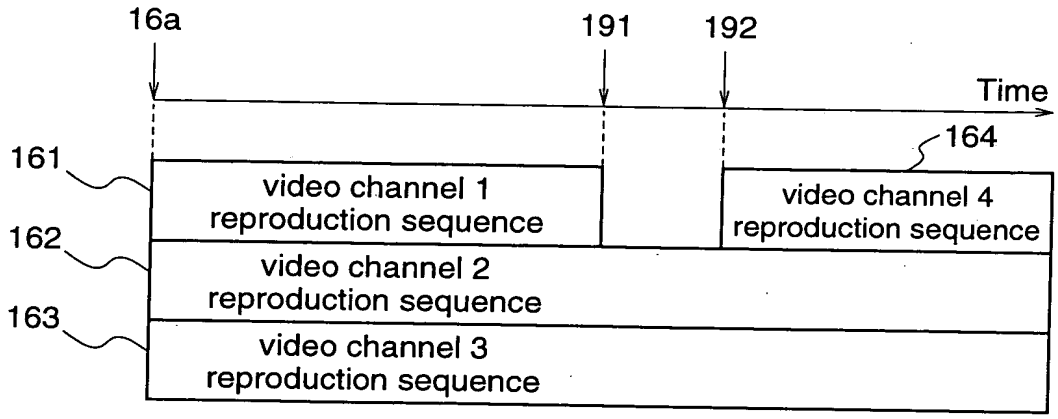

16a
191
192
Time
161
164
video channel 1
reproduction sequence
video channel 4
reproduction sequence
162
video channel 2
reproduction sequence
163
video channel 3
reproduction sequence

Fig.14

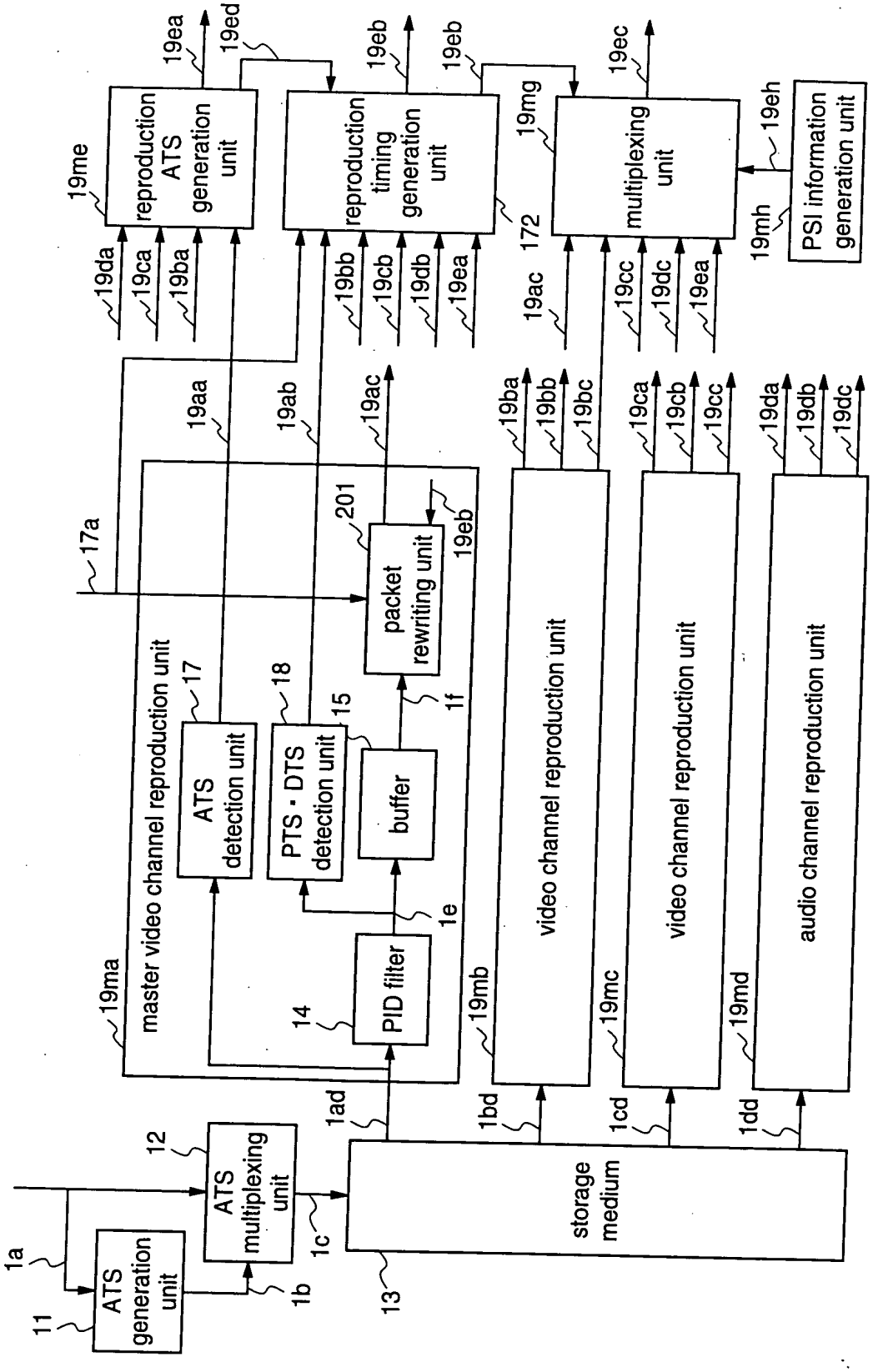

ATS generation unit
ATS multiplexing unit
storage medium
master video channel reproduction unit
ATS detection unit
PTS・DTS detection unit
buffer
PID filter
packet rewriting unit
reproduction ATS generation unit
reproduction timing generation unit
multiplexing unit
PSI information generation unit
video channel reproduction unit
video channel reproduction unit
audio channel reproduction unit
1a
11
1b
12
1c
13
1ad
14
1e
15
17
17a
18
1f
19ea
19ed
19eb
19eb
19ec
19me
19mg
19eh
19mh
19da
19ca
19ba
19bb
19cb
19db
19ea
172
19ac
19cc
19dc
19ea
19aa
19ab
19ac
201
19eb
19ma
19mb
19ba
19bb
19bc
19mc
19ca
19cb
19cc
19md
19da
19db
19dc
1bd
1cd
1dd

Fig.15

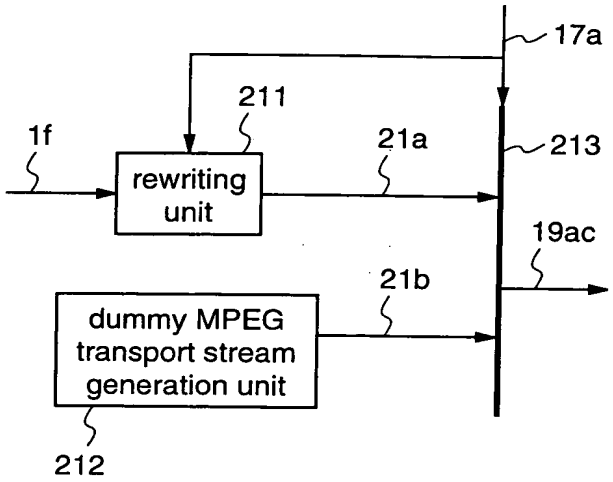

17a
211
1f
21a
213
rewriting unit
19ac
21b
dummy MPEG transport stream generation unit
212

Fig.16

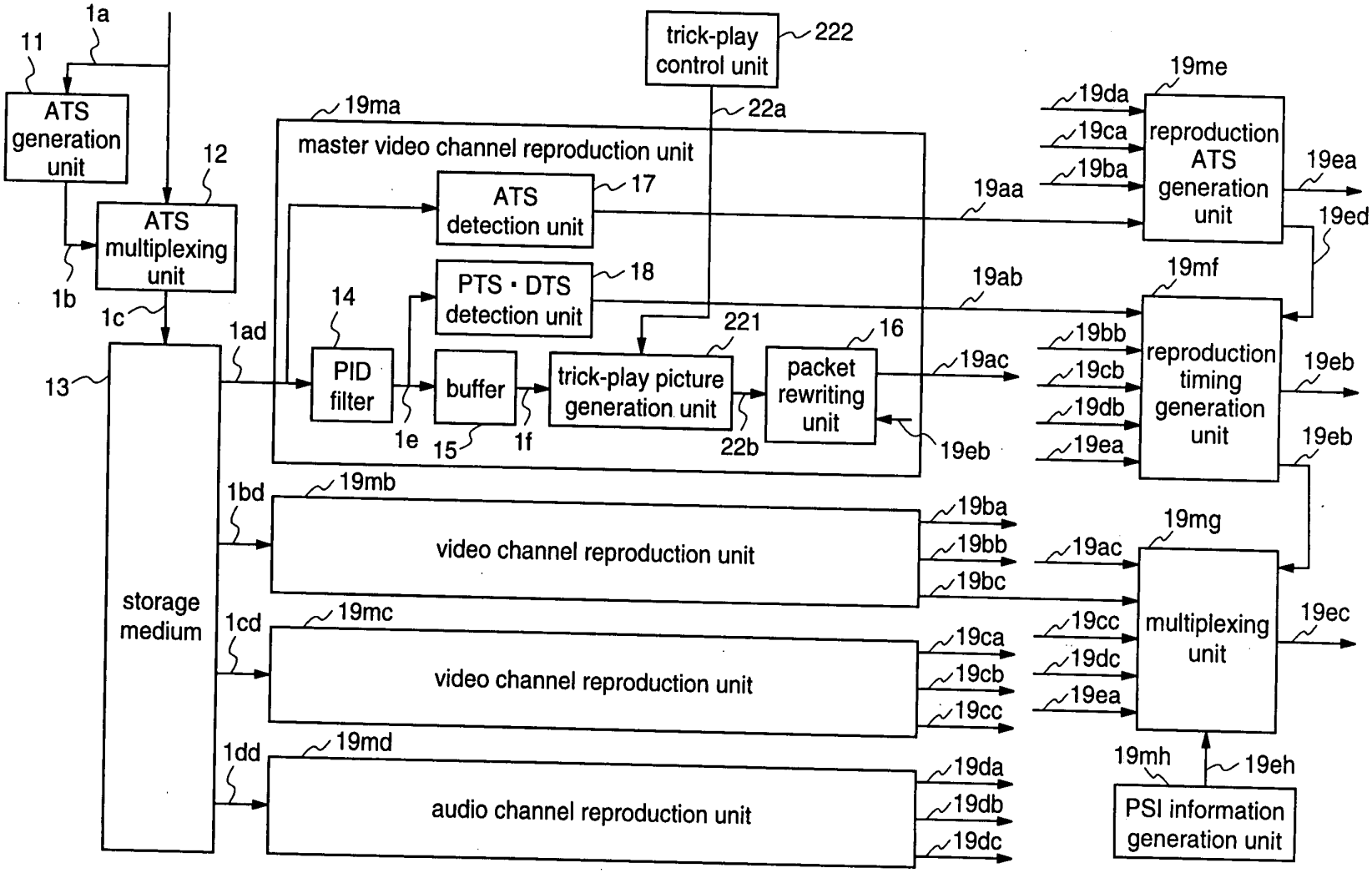

1a
11
ATS generation unit
12
ATS multiplexing unit
1b
1c
13
storage medium
1ad
19ma
master video channel reproduction unit
trick-play control unit
222
22a
ATS detection unit
17
PTS・DTS detection unit
18
14
PID filter
1e
buffer
15
1f
221
trick-play picture generation unit
22b
16
packet rewriting unit
19aa
19ab
19ac
19eb
19me
reproduction ATS generation unit
19da
19ca
19ba
19ea
19ed
19mf
reproduction timing generation unit
19bb
19cb
19db
19ea
19eb
19eb
1bd
19mb
video channel reproduction unit
19ba
19bb
19bc
19mg
multiplexing unit
19ac
19cc
19dc
19ea
19ec
1cd
19mc
video channel reproduction unit
19ca
19cb
19cc
1dd
19md
audio channel reproduction unit
19da
19db
19dc
19mh
19eh
PSI information generation unit

Fig.17

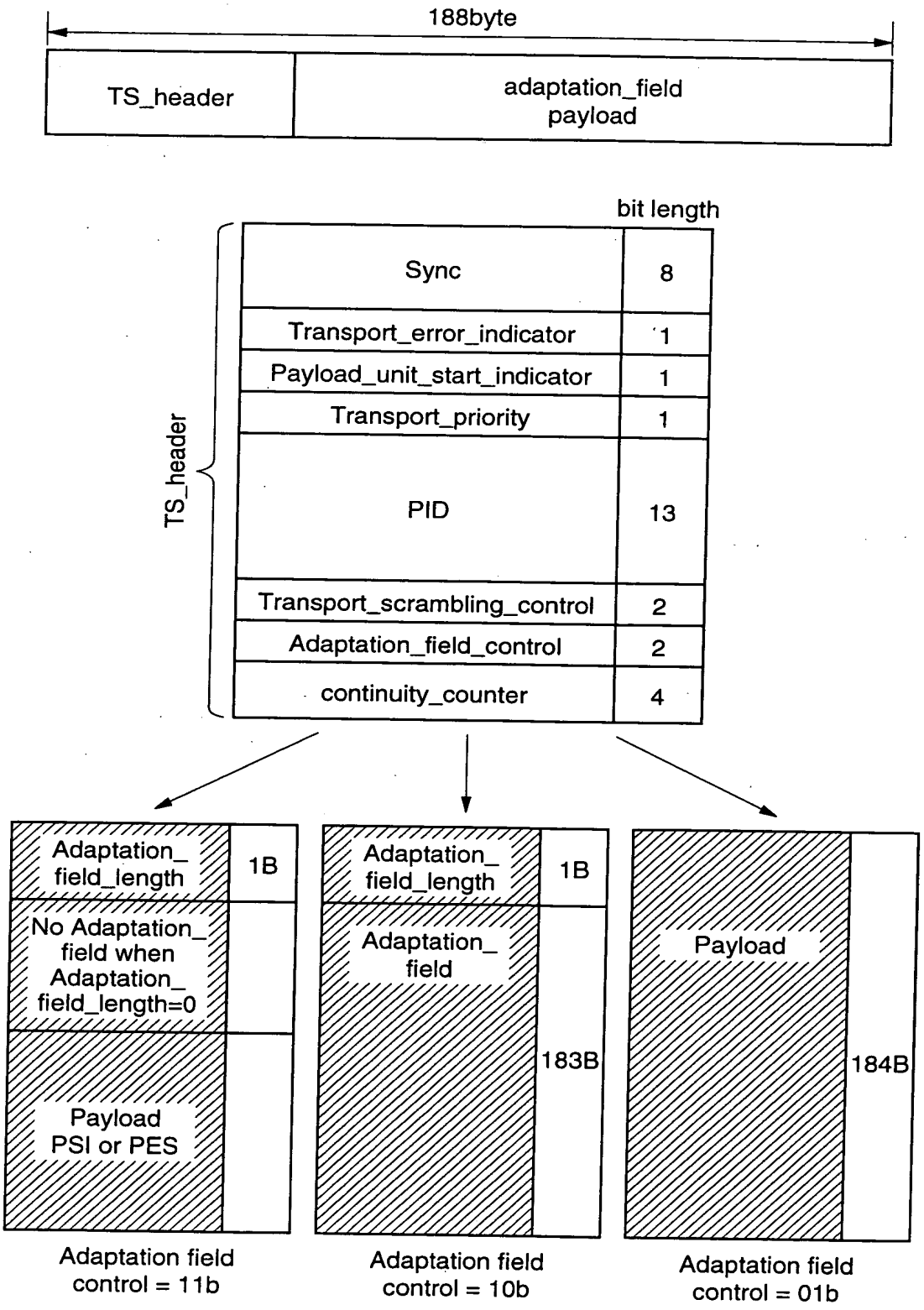

188byte
TS_header
adaptation_field
payload
bit length
TS_header
Sync
8
Transport_error_indicator
1
Payload_unit_start_indicator
1
Transport_priority
1
PID
13
Transport_scrambling_control
2
Adaptation_field_control
2
continuity_counter
4
Adaptation_
field_length
1B
No Adaptation_
field when
Adaptation_
field_length=0
Payload
PSI or PES
Adaptation field
control = 11b
Adaptation_
field_length
1B
Adaptation_
field
183B
Adaptation field
control = 10b
Payload
184B
Adaptation field
control = 01b

Fig.18

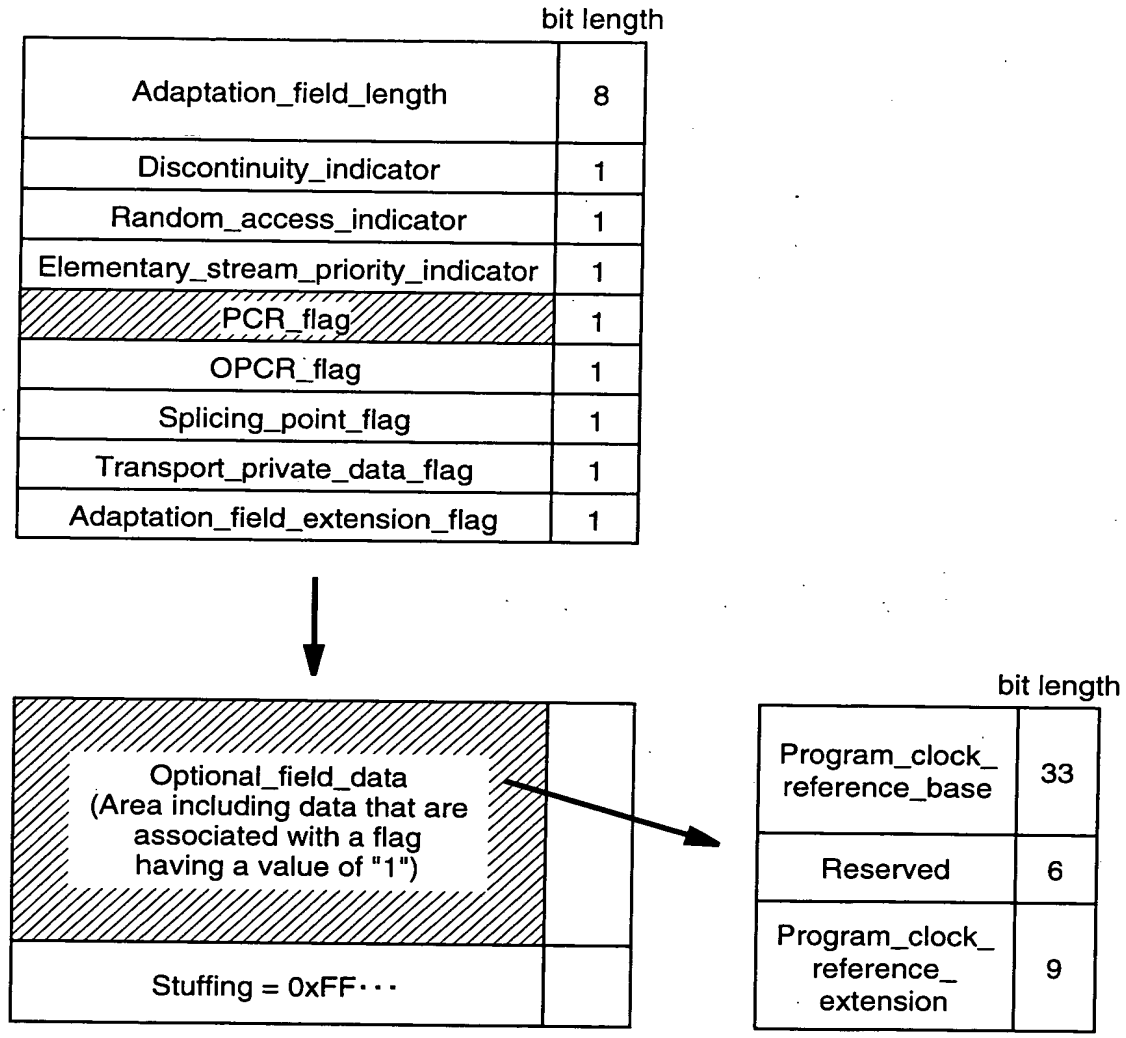

bit length
Adaptation_field_length
8
Discontinuity_indicator
1
Random_access_indicator
1
Elementary_stream_priority_indicator
1
PCR_flag
1
OPCR_flag
1
Splicing_point_flag
1
Transport_private_data_flag
1
Adaptation_field_extension_flag
1
Optional_field_data
(Area including data that are associated with a flag having a value of "1")
Stuffing = 0xFF···
bit length
Program_clock_reference_base
33
Reserved
6
Program_clock_reference_extension
9

Fig.19

	bit length
Packet_start_code_prefix	24
Stream_id	8
10	2
PES_scrambling_control	2
PES_priority	1
Data_alignment_indicator	1
Copyright	1
Original_or_copy	1
PTS_DTS_flags	2
ESCR_flag	1
ES_rate_flag	1
DSM_trick_mode_flag	1
Additional_copy_info_flag	1
PES_CRC_flag	1
PES_extension_flag	1
PES_header_data_length	8
Optional_field_data	
stuffing =0xFF···	
PES_packet_data_byte	

Fig.20

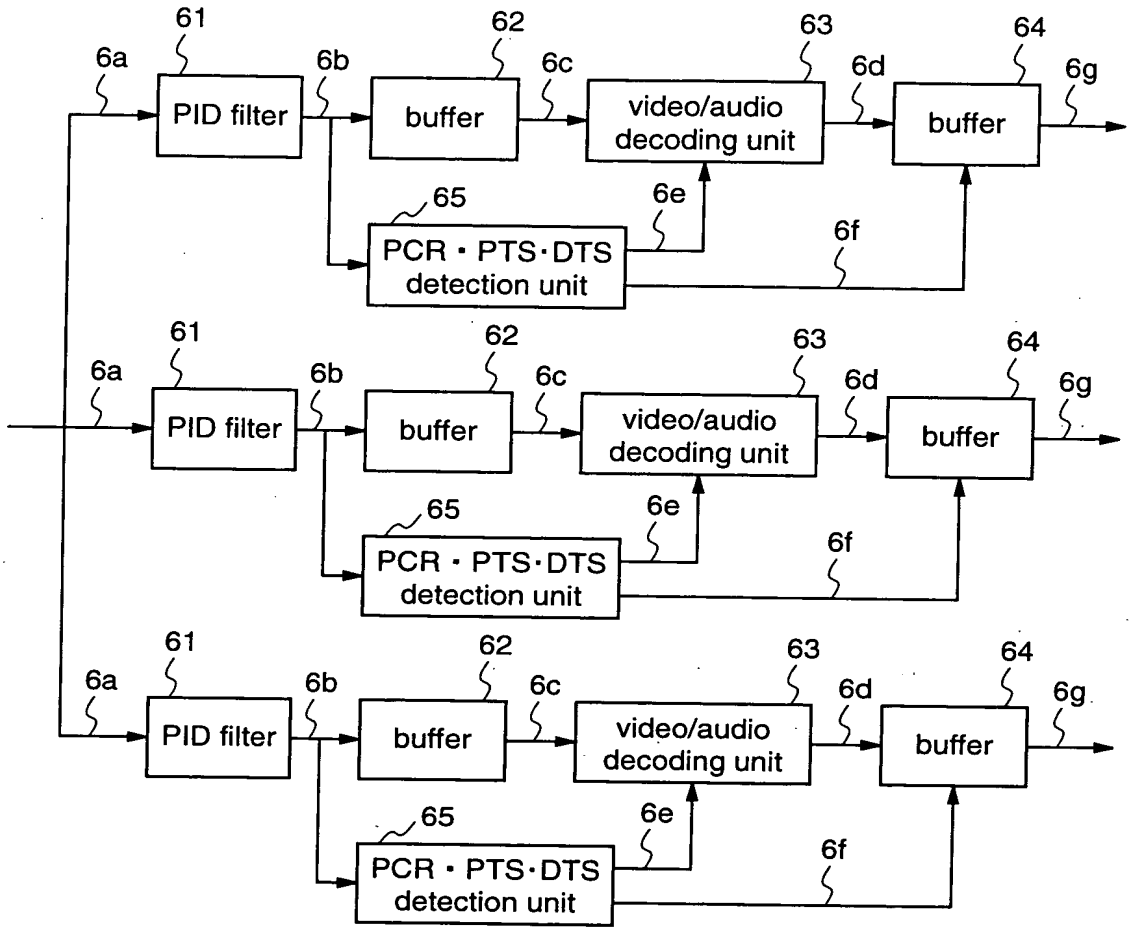
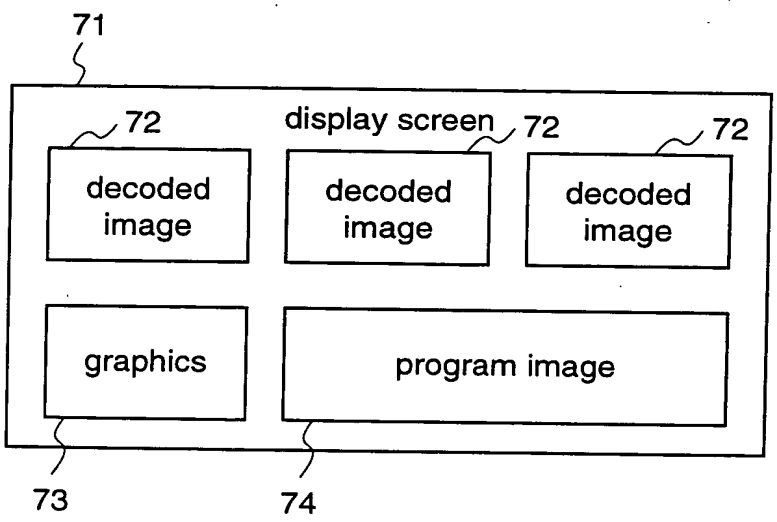

61
62
63
64
6a
6b
6c
6d
6g
PID filter
buffer
video/audio decoding unit
buffer
65
6e
6f
PCR · PTS·DTS detection unit

Fig.21


71
72
display screen
72
72
decoded image
decoded image
decoded image
graphics
program image
73
74

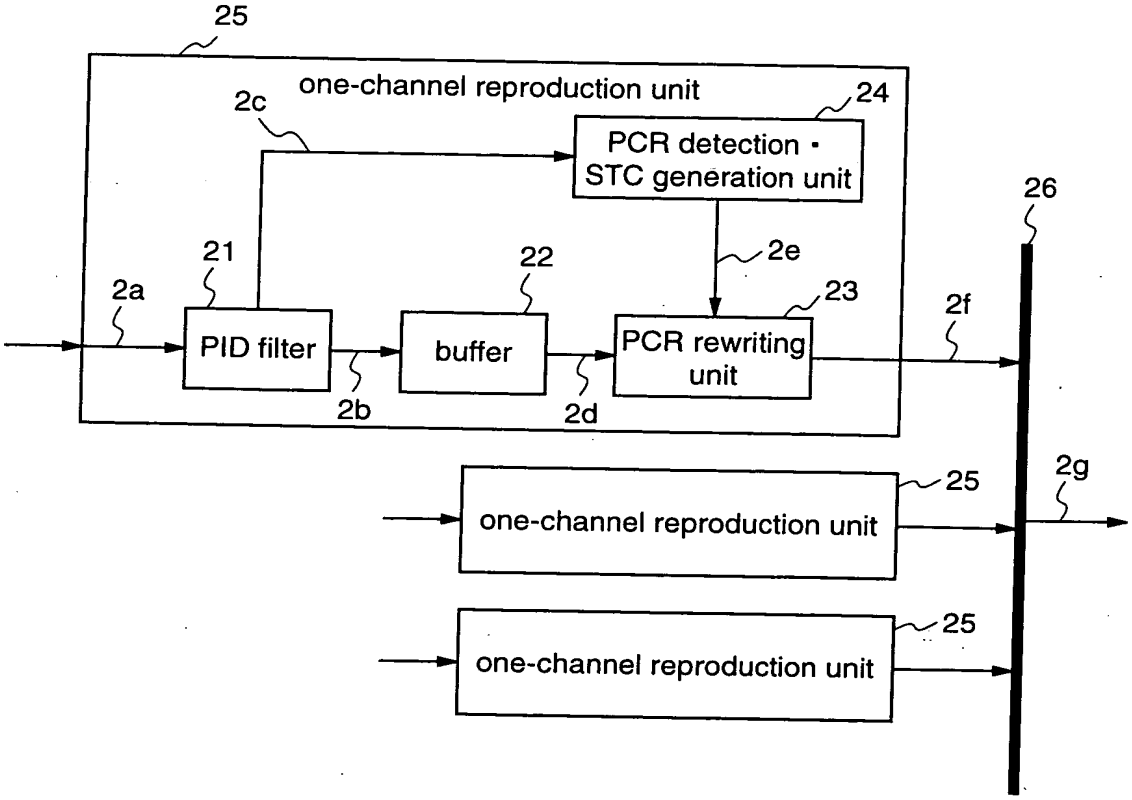



Fig.22 Prior Art